

Sumter County Early Action Plan for the 8-Hour Ozone Standard

Background

In 1997, the Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standard (NAAQS) for Ozone from a one-hour standard to an 8-hour standard. This was done to reflect the latest understanding of the effects of ozone exposure and provide public health protection with adequate margin of safety. EPA will be designating areas as attainment (meeting the standard) or non-attainment (not meeting the standard) in April of 2004. This designation will be based on the most recent three years of monitoring data (i.e., 2001, 2002, 2003). The Department of Health and Environmental Control (DHEC) has an intensive monitoring network covering the state and routinely monitors for ozone during the months of April through October. This time period is often referred to as the “Ozone Season.” If an area is designated non-attainment, the Clean Air Act (CAA) requires states to revise their State Implementation Plan (SIP) outlining how the area will return to attainment within a certain time period. If EPA designates areas in South Carolina as non-attainment in April of 2004, a revision to the South Carolina SIP will be due no later than 2007. Additionally, once an area is designated as non-attainment, the CAA has specific requirements that must be implemented. These requirements affect industry, economic development, and transportation. One requirement, Non-attainment New Source Review sets out the level of emissions reductions required for new and modified industrial facilities. Another requirement of non-attainment areas is to coordinate local transportation and air quality planning to ensure that transportation plans, programs and projects are consistent with air quality goals. According to the CAA, transportation plans, programs, and projects cannot create new violations of the Federal air quality standards; increase the frequency or severity of existing violations of the standard; or, delay attainment of standards.

The above approach is commonly referred to as the “traditional” approach. While safeguards for areas to return to attainment are included, certain prescriptive requirements may not be appropriate for all areas designated non-attainment for the 8-hour ozone standard. As a result, EPA provided an option for areas that were meeting the one-hour standard to attain the 8-hour ozone standard by December 31, 2007, and obtain cleaner air sooner than currently federally mandated. This option offers a more expeditious time frame for achieving emissions reductions, while providing “fail-safe” provisions for the area to revert to the traditional SIP process if specific milestones are not met. EPA will move forward with the designation process (attainment or non-attainment) but will defer the effective date, thus the prescriptive requirements of non-attainment designations, provided all terms and conditions of an Early Action Compact (EAC) are being met.

Forty-five counties in South Carolina elected to participate in the development of an Early Action State Implementation Plan (EAP). Participants in the EAC include the county, DHEC and the EPA. All of these parties agree to work together to implement federal, state and local emissions control measures that will allow the non-attainment areas to attain the 8-hour ozone standard earlier and therefore avoid implementing costly prescriptive measures. The EAC requires that all counties submit a local Early Action Plan to DHEC by March 31, 2004.

Although our county is not a potential area to be designated non-attainment for the 8-hour ozone standard, other areas in South Carolina may be designated non-attainment. As air knows no boundaries, implementation of emission reduction strategies and support of federal and state rules and regulations will help to provide cleaner air sooner to citizens of South Carolina.

What is Ozone?

Ozone is a gas that occurs both in the Earth's upper atmosphere and at ground level. Ozone is one of six criteria pollutants used by the EPA as an indicator of air quality. Depending on where ozone is found, it can be good or bad. Occurring naturally in the upper atmosphere, ozone acts as a shield from the sun's harmful ultraviolet rays. However, ground-level ozone is a concern during the summer months when the weather conditions are favorable for producing ozone. Ozone is formed by chemical reactions between volatile organic compounds (VOCs) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone is a major ingredient of smog.

Ozone Health Effects

Ozone can cause permanent damage to the respiratory system. Active children are at highest risk from ozone exposure because they often spend a large amount of time outdoors. Active adults of all ages who exercise or work outdoors have an increased risk of exposure to elevated levels of ozone. People with asthma or other respiratory diseases are particularly sensitive to ozone exposure.

Sources of NOx and VOCs

NOx and VOCs come from emissions from the following sources: stationary, area, mobile and natural. Stationary sources include larger permitted industry and power plants. Area sources are small, stationary and non-transportation sources that collectively contribute to air pollution. Area sources include gas stations (emit NOx) and dry-cleaners (emit VOCs). Mobile sources are divided into two categories, on-road and off-road. The off-road mobile sources include trains, ships, boats, airplanes, lawn equipment, and construction equipment. On-road mobile sources include cars, trucks, and buses. Natural sources for VOCs are released from vegetation, mostly trees in South Carolina. Natural sources for NOx are very rare and include emissions from soil, lightning, and oceans.

Stakeholder Involvement

Refer to the progress reports submitted every six months for information regarding the stakeholder process and a complete listing of the stakeholder meetings and public outreach initiatives.

Emission Reduction Strategies

Through the development and implementation of this plan, local emission reduction strategies that are economically feasible and that make sense for the county will be implemented no later than April 2005. In doing so, these efforts should assist the state in achieving the 8-hour ozone standard by December 31, 2007, and maintaining the standard beyond 2012.

A number of federal control measures are in place and/or will be phased in over the next several years. These programs include the Tier II and Low Sulfur Gasoline and also the NOx SIP call. All of these programs have been developed to help areas attain air quality standards.

The state is also proposing new and/or modifications to regulations that will assist non-attainment areas. The State programs could include a regulation that would result in VOC and NOx reductions; modifications to the open burning regulations and a process to assure transportation plans, programs, and projects consider air quality goals.

Attachment 1 contains a list of emission reduction strategies that will be implemented by the county. While it may not be possible to determine emissions reductions for each of the strategies included, directionally sound strategies have been selected and the county anticipates the cumulative impact of adopting each of these strategies will assist in maintaining the standard.

Maintenance

The county will continue to address strategies that will assist in long-term maintenance of the 8-hour ozone standard. DHEC will continue to provide the air quality monitoring necessary to determine attainment of the 8-hour ozone standard. Yearly, at the end of each ozone season, there will be a review and evaluation to determine the effectiveness of the strategies adopted. If necessary, additional emission reduction strategies may be adopted. Maintenance of the standard will depend upon the success of emission reduction strategies implemented as well as federal and state initiatives.

Attachment 1

Early Action Compact Milestone - List of Emission Reduction Strategies - Sumter County

According to the latest 8-hour ozone monitoring data, Sumter County should remain attainment for the 8-hour ozone standard. However, in an effort to assist other areas in South Carolina and in the interest of public health and the environment, in December 2002, Sumter County agreed to participate in the 8-hour ozone early action process. Therefore, based on stakeholder consultation and taking into consideration resource and political constraints, the following emission reduction strategies remain under consideration. Sumter County will continue to evaluate the air quality within the county and may implement one or more of the following measures under consideration.

Measure under consideration	Detailed description of measure	Current assessment of emission reductions	Proposed date for implementation	Geographic area and/or local government
Air Quality Contact	County staff person responsible for air quality education/outreach and dissemination of ozone forecast.	Directionally sound	March 2004	County wide
Support state-wide emission reduction efforts	County will offer support to DHEC for statewide emission reduction efforts such as open burning, and BACT	Directionally sound	Upon implementation by state	County wide
Fleet management	Sumter County and City governments will consider purchase of alternative fueled or more fuel efficient vehicles when buying replacement	Directionally sound	Not available	County wide
Alternative fuels	Sumter County and City governments will seek the latest information on low emission fuels for use in fleet vehicles	Directionally sound	Not available	County wise
Education	Air Quality Contact will promote use of "Action for a Cleaner Tomorrow" curriculum with Districts 17 and 2	Directionally sound	March 2004	County wide
Education	Air Quality Contact will develop list of speakers to make presentation on ozone reduction strategies	Directionally sound	April 2004	County wise
Idle time reduction	County will develop education program to reduce idling time of fleet vehicles	Directionally sound	April 2004	County wide
Varied maintenance hours	Cty. Dept. of Public Works will schedule maintenance activities to avoid peak time emissions during ozone alerts	Directionally sound	April 2004	County wide
Tree ordinance	Propose changes to current tree ordinance to protect existing trees in new developments	Directionally sound	Not available	County wide
Ozone alert notification	Develop system to notify county and city government agencies of ozone alert days and encourage implementation of strategies	Directionally sound	April 2004	County wide
Tree Planting	Sumter Soil and Water Conservation District will provide technical assistance in planting/replanting 500 acres in trees per year	Directionally sound	On going	County wide
Development model	Sumter Cty. Development Board will continue to support mixed use developments	Directionally sound	On going	County wide
Alternative transportation modes	Support construction of pedestrian and bicycle paths when new roadways are built or improved	Directionally sound	April 2004	County wide
Tree Planting	Continue activities necessary to remain a certified "Tree City"	Directionally sound	On going	City wide